

Attorney Docket No.: F6177(V)
Serial No.: 10/693,475
Filed: October 24, 2003
Confirmation No.: 2548

REPLY BRIEF FOR APPELLANTS

Sir:

This Reply Brief on Appeal is in response to the Examiner's Answer dated January 14, 2008 and Correction thereto dated February 5, 2008. The following are new points of argument raised by the Examiner's Answer and Appellants' arguments in response thereto.

The Commissioner is hereby authorized to charge any additional fees, which may be required to our deposit account No. 12-1155, including all fees required under: 37 C.F.R. §1.16; 37 C.F.R. §1.17; 37 C.F.R. §1.18; 37 C.F.R. §1.136.

The Present Invention is Not Obvious under 35 U.S.C. § 103(a)

The invention set forth in the claims on appeal is directed to a reduced oil superior edible oil-in-water emulsion, a method for making the reduced oil emulsion and a food product comprising the reduced oil emulsion, having less than 85 % oil. As shown in Examples 1 and in the Specification (beginning on p. 15, line 1 +), the claimed low oil products unexpectedly display rheological properties similar to full fat products while they unexpectedly look, taste, and have a mouthfeel similar to that of full fat products, which inventive low fat oil products are superior when compared to conventional low oil compositions.

The Examiner has rejected claims 1, 3, 4, 8-17, 19-23 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Hercules in view of Fischer as further evidenced by Lowe and also Schwartzberg. In the rejection, the Examiner maintains, in summary, that Hercules discloses low fat salad dressing made to contain a pectin derivative as a fat substitute. The Examiner also states that the pectin component is regarded as the fiber source.

The Examiner admits that Hercules is deficient as to

- 1) insoluble fiber;
- 2) "viscosity building" emulsifier ;
- 3) homogenizer and its settings.

To cure the vast deficiencies of the primary reference, Fischer is cited, especially to cure the failure of Hercules to disclose insoluble fibers, although the combination is still deficient as to

- (I) viscosity building emulsifier,
- (II) amount of viscosity building emulsifier;
- (III) the HLB of the emulsifiers,

- (IV) the oil droplet size of the composition, and
- (V) homogenizer use and settings.

Swartzberg is relied upon for HLB. Further, Lowe is relied upon for casein and egg white as emulsifier. According to the Examiner, no unobvious or unexpected result is seen from oil droplet size. Examiner asserts it would be an obvious matter of choice to use one type of colloid mill over another.

Notwithstanding the Examiner's apparent position to the contrary, it is, again, the Appellants' position that the presently claimed invention is patentably distinguishable from the above-described for at least the following reasons.

The present invention, again, as set forth in independent claim 1, is directed to a superior edible emulsion comprising:

- a) less than about 85.0% by weight oil;
- b) water;
- c) about 0.5 to about 12.0 % by weight emulsifier comprising a viscosity-building emulsifier that at 2.0% by weight is partially or completely not soluble in acidified deionized water having a pH of ≤ 5.5 or a viscosity-building emulsifier that is at least about 50.0% by weight protein, or both;
- d) about 0.1 to about 1.0% by weight insoluble fibers; wherein the insoluble fibers are citrus or non-citrus; and
- e) thickener

wherein the edible emulsion is coarse or smooth oil-in-water emulsion ; and further wherein said viscosity building emulsifier makes up about 0.1 to about 4.0 percent by weight of the edible emulsion, with the proviso that when chemical emulsifier is used, less chemical emulsifier is used than viscosity-building emulsifier.

Independent claim 14 is directed to a method for making an edible emulsion comprising insoluble fibers comprising the steps:

- a) mixing, in no particular order,
less than about 85.0% by weight oil,

water,

insoluble fiber, wherein the insoluble fibers are citrus or non-citrus;

thickener and

about 0.5 to about 12.0 % by weight emulsifier comprising a viscosity building emulsifier that at 2.0% by weight is partially or completely not soluble in acidified deionized water having a pH of ≤ 5.5 or a viscosity-building emulsifier that is at least about 50.0% by weight protein, or both, to make a coarse emulsion; and

b) recovering the coarse emulsion

wherein the coarse emulsion may optionally be homogenized in a homogenizer to produce a smooth emulsion; and

further wherein viscosity building emulsifier makes up about 0.1 to about 4.0 percent by weight of the edible emulsion, with the proviso that when chemical emulsifier is used, less chemical emulsifier is used than viscosity-building emulsifier.

Independent Claim 17 is directed to a food product comprising the reduced oil edible emulsion formulated and processed according to the present invention, and wherein the food product has a viscosity greater than about 3,000 centipoise and less than about 150,000 centipoise.

In contrast and as already made of record, none of the important and critical limitations set forth in the presently claimed invention are even remotely described in the Hercules in view of Fischer as further evidenced by Lowe and also Schwartzberg references. The unique claimed relative amounts of viscosity building emulsifiers and homogenizer settings would not be predictable to one skilled in the art on the basis of the cited art. The Hercules reference merely discloses a 0 to low fat salad dressing having a semi-gelled pourable system comprising an amidated galacturonic acid methylester with a degree of esterification below 55% (LMA pectin) to replace part or all of the fat in the salad dressing. The modified molecules described in Hercules are not the same as the pectin naturally associated with the citrus fibers such as Herbacel AQ of Fischer. Because the pectin of Hercules is different, one skilled in the art would **not**

predict that it may be interchangeable with Fischer's Herbacel AQ dietary fiber which has natural pectin (as opposed to modified pectin) associated with it and insoluble fiber. Appellants submit that the two are not interchangeable. Accordingly, the Examiner's position notwithstanding, with the references of Hercules and Fischer before him, it would not have been obvious to one of ordinary skill in the art to select Fischer's Herbacel as a pectin source for Hercules in order to provide a salad dressing with an enhanced viscosity. Certainly, no guidance is provided in the references for making a spoonable reduced fat mayonnaise product which requires even more viscosity than the pourable salad dressings of Hercules.

Hercules Teaches Away from the Presently Claimed Emulsifier System

The present invention is based on the need for a reduced oil emulsion. When the oil level in an oil-in-water emulsion is reduced, the aqueous phase is increased and this leads to a less firm emulsion (from spoonable to pourable). According to the present invention, citrus fiber in combination with a unique emulsifier system provides structure to the aqueous phase. Additionally, emulsions are made to have smaller oil droplet sizes which, in combination with the use of citrus fiber and the claimed emulsifier system, provide a product quality that is close to full fat products, such as reduced oil mayonnaise that closely matches product quality of full fat mayonnaise.

The present invention also differs from the cited art in the requirement that the protein in the oil-in-water emulsion composition be a viscosity building emulsifier and amount used. Notably, the presence of the viscosity building emulsifiers has shown (see example 2) that mayonnaise made via this invention has shine or sheen (which was key), firmness, mouth dissipation, and viscosity consistent with real mayonnaise, notwithstanding the fact that about 42% less oil was used.

The Examiner's position notwithstanding, the emulsifiers presently claimed in the Claims 1, 14, 17 and their dependent claims, are not the same as those used in

Hercules. In fact, Hercules teaches away from the present invention by providing replacement of viscosity building emulsifiers such as caseinate or whey protein with LMA pectin. Hercules teaches away by providing replacement of proteins like egg yolk, egg white, or milk proteins such as caseinate or whey protein with the LMA pectin. See Col. 2, lines 47-54; Col. 4, lines 36-38; Examples 1-2 at Col. 7-8 (only LMA, and no egg or caseinate is used); Claims 1-17. In contrast, the present invention as claimed requires proteins as viscosity building emulsifier and does not use LMA. Accordingly, Hercules teaches away from the present invention and leads to a product with a different sensory perception. The invention should be viewed as a whole, rather than picking and choosing elements from a multitude of references.

Hercules teaches away from use of High Pressure Homogenizer or Shear

Hercules teaches away from use of high pressure homogenization, or any shear at all, while Claim 15 requires high pressure homogenization and is therefore separately patentable. Claim 15 is specifically supported by Example 1 on pp. 15-16 of the Specification. In contrast, Hercules does not require high shear in order to obtain its desired texture. See Hercules and col. 4, lines 12-20, which reads in part:

The main function of the pectin is to form a sort semigel/pourable texture in the final product. This function does not require high shear in order to obtain the desired texture.

Thus, according to Hercules, pectin alone is sufficient for texture and no high shear is needed. On the basis of this teaching away in Hercules, Hercules would not be helpful to one skilled in the art for it would not be predictable to one skilled in the art to use a high pressure/high shear homogenizer to activate the insoluble fibers to increase the viscosity of the product. In contrast, the use of insoluble fibers according to the present invention processed in a HPH allows for partial replacement of starch and gums on reduced oil products such as mayonnaise. The result is a low oil mayonnaise without sticky

mouthfeel. This brings low oil mayonnaise in parity to full fat products. The invention is directed to a reduced oil product that unexpectedly has the mouthfeel of a full fat product.

Objective Evidence of Non-obviousness

Example 2 on pp. 16-17 in the Specification unexpectedly shows that the low oil mayonnaise of this invention looks, tastes and has a mouthfeel similar to that of real (full-fat) mayonnaise and significantly better than conventional light mayonnaise products.

The Examiner has combined references that teach away from each other. In view of the above, it is again clear that the Examiner has not established a *prima facie* case of obviousness as required under 35 USC §103. At the same time, Applicants have presented evidence of unexpected results.

CONCLUSION

In view of the above, Appellants respectfully submit that a proper rejection under 35 U.S.C. § 103(a) has not been made and the application is in condition to be allowed to issue. Accordingly, reversal of the Final Rejection by the Honorable Board is appropriate and is courteously solicited.

Respectfully submitted,

/Ellen Plotkin/

Ellen Plotkin
Registration No. 36,636
Attorney for Applicant(s)

EP/ss
(201) 894-2253